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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,649	04/01/2004	Michael Eugene Coluzzi	46417.001024	5903
21967	7590	11/23/2005		
HUNTON & WILLIAMS LLP INTELLECTUAL PROPERTY DEPARTMENT 1900 K STREET, N.W. SUITE 1200 WASHINGTON, DC 20006-1109			EXAMINER MULL, FRED H	
			ART UNIT 3662	PAPER NUMBER

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/814,649

Applicant(s)

COLUZZI ET AL.

Examiner

Fred H. Mull

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The MPEP states the following with respect to large information disclosure statements:

*Although a concise explanation of the relevance of information is not required for English language information, applicants are encouraged to provide a concise explanation of why the English-language information is being submitted. Concise explanations (especially those that point out the relevant pages and lines) are helpful to the Office, particularly where documents are lengthy and complex and **applicant is aware of a section that is highly relevant to patentability** or where a large number of documents are submitted and **applicant is aware that one or more is highly relevant to patentability**. -- MPEP § 609 (emphasis added).*

"Aids to Compliance With Duty of Disclosure," item 13:

***It is desirable to avoid the submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant information and marginally pertinent cumulative information. If a long list is submitted, highlight those documents which have been specifically brought to Applicant's attention and/or are known to be of the most significance.*** -- MPEP § 2004 (emphasis added).

Therefore, it is recommended that if any information that has been cited by Applicant in the Information Disclosure Statement(s) is known to be material to patentability as defined by 37 CFR § 1.56, Applicant should present a concise statement as to the relevance of that/those particular documents.

**Specification**

1. The disclosure is objected to because of the following informalities:

In ¶63, the second instance of "+" should be deleted.

In ¶64, should " $N(\sigma_i)$ " be  $-N(\sigma_i)$ --?

In ¶71, it is unclear what the quantities  $r$  and  $d_{in}^2$ , or, alternatively,  $rd_{in}^2$ , are defined as.

Appropriate correction is required.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 10-11, 16, and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by IDS document Ghosh.

In regard to claim 10, Ghosh discloses:

obtaining a time of arrival for a signal received at the sensor (col. 7, lines 50-59;  
col. 8, lines 6 and 32-33);

calculating a slant range from the object to the sensor based, at least in part, upon the obtained time of arrival (col. 9, lines 16-21); and

determining a position vector based, at least in part, upon the calculated slant range and the location of the sensor (col. 9, lines 16-27).

In regard to claim 11, Ghosh further discloses the time or arrival being obtained from a signal transmitted from the object (col. 7, line 8 to col. 9, line 40), where the subscriber unit is transmitting to the base stations.

In regard to claim 19, Ghosh further discloses:

a sensor arranged at a determinable location (col. 7, lines 50-59; col. 9, lines 17-18).

In regard to claims 1 and 3, Ghosh further discloses the sensors arranged at differing heights (col. 9, lines 41-63);

a sensor at a determinable location (120, Fig. 4); and

a reference sensor (110), where any base station can be called the reference sensor.

In regard to claim 2, Ghosh further discloses the slant range from the object to each sensor is calculated by  $sr = c(t_0 - t_{tgt})$  (col. 2, lines 14-21).

In regard to claim 16, Ghosh discloses:

obtaining a time of difference arrival for a signal received at the sensor (col. 2, lines 50-53);

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calculating a slant range from the object to the sensor based, at least in part, upon the obtained time difference of arrival (col. 2, lines 19-20); and

determining a position vector based, at least in part, upon the calculated slant range and the location of the sensor (col. 2, lines 20-24).

In regard to claim 18, Ghosh further discloses:

a sensor at a determinable location (121, Fig. 1; col. 2, lines 50-53); and

a reference sensor (110), where any base station can be called the reference sensor.

In regard to claims 4 and 6, Ghosh further discloses the sensors arranged at differing heights (col. 9, lines 41-63).

In regard to claim 5, Ghosh further discloses the slant range from the object to each sensor is calculated by  $sr = c(t_0 - t_{tgt})$  (col. 2, lines 14-21).

3. Claims 7-10, 12, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by IDS document Scanlon.

In regard to claim 10, Scanlon discloses:

obtaining a time of arrival for a signal received at the sensor (col. 7, lines 37-41; col. 13, lines 52 to col. 14, line 1), where the time the signal arrives at the sensors is recorded;

calculating a slant range from the object to the sensor based, at least in part, upon the obtained time of arrival (col. 7, lines 40-43; col. 13, line 55 to col. 14, line 1); and

determining a position vector based, at least in part, upon the calculated slant range and the location of the sensor (col. 13, line 55 to col. 14, line 11).

In regard to claim 12, Scanlon further discloses the time of arrival is obtained from a signal reflected from the object (col. 7, lines 37-40; col. 13, lines 59-63).

In regard to claims 7 and 17, Scanlon further discloses:

a secondary surveillance device that, at a determinable transmission time, transmits an interrogator signal that is reflected off the object, or received and retransmitted by the object, to a secondary sensor and obtains a secondary time of arrival for the reflected or retransmitted interrogator signal received at the secondary sensor (col. 13, line 53), where one of the triad of sensors is the "a sensor" and another of the triad of sensors is the "a secondary surveillance device". Each record the arrival time of the signal that reflects of the object. The slant range and position calculations use both these arrival times in their calculations.

In regard to claim 8, Scanlon further discloses the slant range from the object to the sensor is calculated by  $sr = c(t_1 - t_{tgt})$  (col. 12, lines 48-66; col. 13, lines 58-60).

In regard to claim 9, Scanlon further discloses the slant range from the object to the secondary sensor is calculated by  $sr = c(t_2 - t_{tgt})$  (col. 12, lines 48-66; col. 13, lines 58-60).

4. Claims 10-11 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Zekavat.

In regard to claims 10 and 19, Zekavat discloses:

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obtaining a time of arrival for a signal received at the sensor (§ 29, lines 3-4);  
calculating a slant range from the object to the sensor based, at least in part,  
upon the obtained time of arrival (§ 29, line 7); and  
determining a position vector based, at least in part, upon the calculated slant  
range and the location of the sensor (§ 29, lines 2-4).

In regard to claim 11, Zekavat further discloses the time or arrival being obtained  
from a signal transmitted from the object (§ 29, lines 2-4).

5. Claims 10-11 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by  
Lee.

In regard to claims 10 and 19, Lee discloses:  
obtaining a time of arrival for a signal received at the sensor (§ 23, line 4);  
calculating a slant range from the object to the sensor based, at least in part,  
upon the obtained time of arrival (§ 23, line 5); and  
determining a position vector based, at least in part, upon the calculated slant  
range and the location of the sensor (§ 23, lines 10-13).

In regard to claim 11, Lee further discloses the time or arrival being obtained  
from a signal transmitted from the object (§ 23, lines 1-4).



6. The examiner also finds the following reference(s) relevant:

Coluzzi, which is an application by the current applicants filed the same day.

Elgersma and Abel, which discuss minimizing and error norm.

Applicant is encouraged to consider these documents in formulating their response (if one is required) to this action, in order to expedite prosecution of this application.

***Allowable Subject Matter***

7. Claim(s) 13-15 is/are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull  
Examiner  
Art Unit 3662

fhm



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